



# 2018 Spring Electrofishing (SEII) Summary Report

## Weyauwega Millpond (WBIC 257700)

Waupaca County

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### Introduction and Survey Objectives

In 2018, the Department of Natural Resources conducted a one night electrofishing survey of Weyauwega Millpond in order to provide insight and direction for the future fisheries management of this water body. Primary sampling objectives of this survey were to characterize species composition, relative abundance, and size structure. The following report is a brief summary of that survey including the general status of the fish populations and future management options for Weyauwega Millpond.

Acres: 253      Shoreline Miles: 7.33      Maximum Depth (feet): 11  
Lake Type: Impoundment      Public Access: Two Public Boat Launches  
Regulations: Statewide Default Regulations

### WISCONSIN DNR CONTACT INFO.

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### Survey Information

Site Location	Survey Date	Water Temperature (°F)	Target Species	Total Miles Shocked	Number of Stations	Gear	Number of Netters
Weyauwega Millpond	5/15/2018	68	All	2.82	4	Boomshocker	2

### Fish Metric Descriptions PSD, CPUE, LFD, and Mean Age at Length

**Proportional Stock Density (PSD)** is an index used to describe size structure of fish populations. It is calculated by dividing the number of quality size fish by the number of stock size fish for a given species. PSD values between 40 - 60 generally describe a balanced fish population.

**Catch per unit effort (CPUE)** is an index used to measure fish population relative abundance, which simply refers to the number of fish captured per unit of distance or time. For electrofishing surveys, we typically quantify CPUE by the number and size of fish per mile of shoreline. CPUE indexes are compared to statewide data by percentiles. For example, if a CPUE is in the 90th percentile, it is higher than 90% of the other CPUEs in the state.

**Length frequency distribution (LFD)** is a graphical representation of the number or percentage of fish captured by half inch or one inch size intervals. Smaller fish (or younger age classes) may not always be represented in the length frequency due to different habitat usage or sampling gear limitations.

**Mean Age at Length** is an index used to assess fish growth. Calcified structures (e.g., otoliths) are collected from a specified length bin of interest (e.g., 5.5 - 6.4 inches for bluegill). Mean age is compared to statewide data by percentile with growth characterized by the following benchmarks: slow (<33rd percentile); moderate (33rd to 66th percentile); and fast (>66th percentile).

### Survey Method

- Weyauwega Millpond was sampled according to spring electrofishing (SEII) protocols as outlined in the statewide lake assessment plan. The primary objective for this sampling period was to count and measure adult bass and panfish. Other gamefish and panfish may be sampled but are considered by-catch as part of this survey.
- Just over two and a half miles were sampled. All fish captured were identified to species and gamefish and panfish were measured for length.
- Fish metrics used to describe fish populations include proportional stock density, catch per unit effort, and length frequency distributions.



### Size Structure Metrics

Species	Total	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock Number	Quality Number	PSD	Percentile Rank	Size Rating
BLUEGILL	78	6.2	3.5 - 8.0	3.0 and 6.0	78	49	63	87th	High
PUMPKINSEED	121	5.2	3.5 - 6.9	3.0 and 6.0	121	13	11	29th	Low
LARGEMOUTH BASS	64	13.2	3.2 - 18.8	8.0 and 12.0	57	45	79	85th	High

### Abundance Metrics

Species	CPUE Total (number per mile)	Percentile Rank	Overall Abundance Rating	Length Index	Length Index CPUE	Length Index Percentile Rank	Length Index Abundance Rating
BLUEGILL	78.0	47th	Moderate	≥ 7.0 inches	25.0	82nd	High
PUMPKINSEED	121.0	98th	High	≥ 7.0 inches	0	-	-
LARGEMOUTH BASS	22.7	65th	Moderate	≥ 14.0 inches	12.4	91st	High



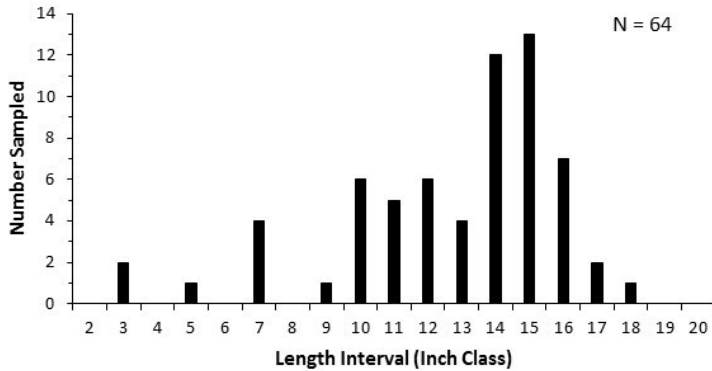
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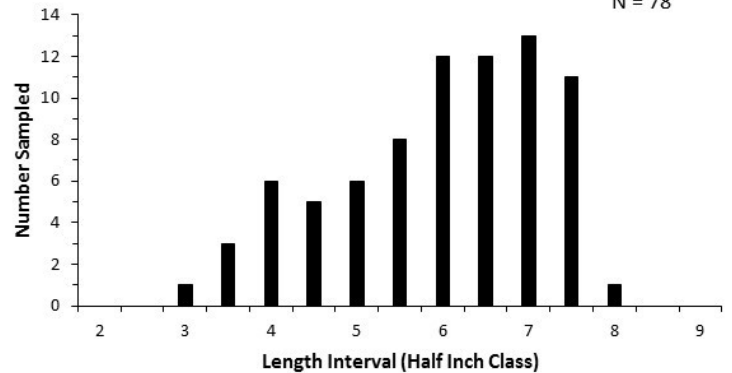
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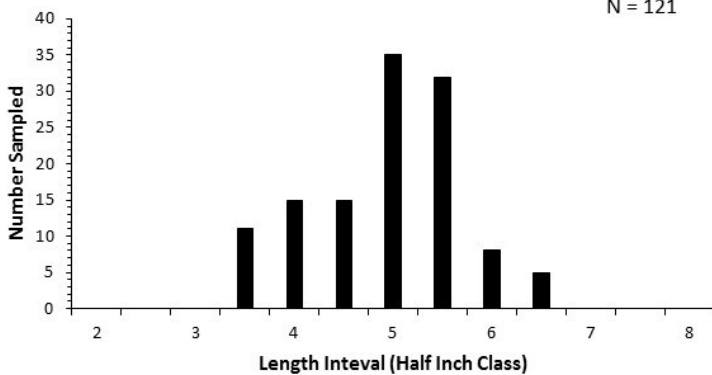
**Largemouth Bass Length Distribution**



**Bluegill Length Distribution**



**Pumpkinseed Length Distribution**



Growth Metrics						
Species	Total	Length Bin	Mean Age	Age Range	Percentile Rank	Growth Rating
BLUEGILL	13	5.5 - 6.4	3.3	3 - 4	86th	Fast
BLUEGILL	8	6.5 - 7.4	3.9	3 - 4	84th	Fast



## Summary

- A total of 471 fish from 12 different species were captured in the electrofishing survey. The most frequently encountered and common species were black bullhead (168), pumpkinseed (121), bluegill (78), and largemouth bass (64).
- Other species sampled in lower abundance include golden shiner (14), northern pike (8), white sucker (7), black crappie (4), yellow bullhead (3), smallmouth bass (2), golden redhorse (1), and common carp (1).
- One non-native common carp was captured. Otherwise all other fish captured were native species.
- Largemouth bass were the dominant gamefish species captured in our survey. Largemouth bass were found in moderate densities with a PSD of 79 and a high density (when compared to statewide percentiles) of harvestable size fish with 12.4 largemouth bass  $\geq 14$  inches captured per mile of electrofishing. Decent numbers of smaller largemouth bass were also captured. These should grow to sizes desired by anglers in the next couple of years.
- Eight northern pike were captured in the electrofishing survey. However, fyke netting is a more appropriate sampling gear to assess the northern pike population. A fyke netting survey was conducted in spring 2018 and a separate report was written summarizing the results from this survey.
- Pumpkinseed and bluegill were the dominant panfish species captured in our survey. Densities of pumpkinseed were high but size structure was low, with few pumpkinseed  $\geq 6.0$  inches captured. Bluegill were captured in moderate densities with good size structure as bluegill PSD was 63, and 25 bluegill  $\geq 7.0$  inches were captured per mile of electrofishing. Bluegill growth rates in Weyauwega Millpond were fast, likely due to low-moderate densities and ample resources following the drawdown.

## Management Options

This survey was primarily intended to assess largemouth bass and panfish populations. Other species are captured but different survey techniques are typically used to better assess their population metrics. Therefore, management recommendations are focused on largemouth bass and panfish.

### Largemouth Bass

- Largemouth bass were found at optimal levels in Weyauwega Millpond and the population has recovered nicely following the drawdown from 2011 - 2013. Densities were moderate whereas size structure was high. Abundant forage is available for largemouth bass including various bullhead and sucker species as well as panfish.
- No management action recommended at this time.

### Panfish

- Bluegill populations also recovered nicely following the drawdown, as bluegill were captured in moderate densities and a balanced size structure with plenty of harvestable size bluegill as well as bluegill that will grow to harvestable size in the next couple of years.
- Continue to maintain predator densities at current levels to prevent bluegill from becoming overabundant and stunting.

### Other Management Objectives

- A comprehensive survey report that provides detailed trends in relative abundance and size structure for all gamefish and panfish species over the last 20 years is also available.
- Continue to work with WDNR staff and local management organizations to manage invasive aquatic plants. High densities of invasive plants can inhibit the ability of predators to forage resulting in slow growing predator populations and overabundant, stunted panfish populations.